

# Useful Hints for Car Owners

Simple device will keep car from jamming hub caps and fenders—  
Poor-idling motor quickly cured  
with notch in butterfly valve—How  
leaky inlet guides may be fixed.

**B**ROKEN fenders and mashed hub caps often are caused by collision with the side walls in a narrow garage. Figure 1 shows how to prevent such trouble by fitting guide bars that will keep the car away from the walls or door jams in driving in or backing out.

A couple of lengths of two-by-fours can be cut and mounted as shown in the illustration. Since it is desirable that the tires should not rub against the guide bars any more than necessary, place them just as close to the side walls as will insure keeping the mudguards, running boards, or hub caps from striking anything. If placed flat on the ground the two-by-fours will not prove effective because the tires will have a tendency to ride over them. On the other hand, if they are placed too high and the car is fitted with wire spoked wheels the spokes may be injured. Consider these factors when fitting them. Be sure to round off the edges of the two-by-fours against which the tires will rub and see that they are planed and sandpapered smooth. Also note that the guiding two-by-fours should be fastened to the supporting sections so the latter are one quarter to one half inch back of the edge of the guiding bar.

## Curing Poor Idling

THE effective opening past the butterfly valve, to allow the motor to idle at a slow speed, is surprisingly small. After the car has been in use for several years, the shaft on which the butterfly is mounted and its bearings become worn. The result is that the butterfly never closes to the same position twice running; in addition, a considerable amount of air leaks through

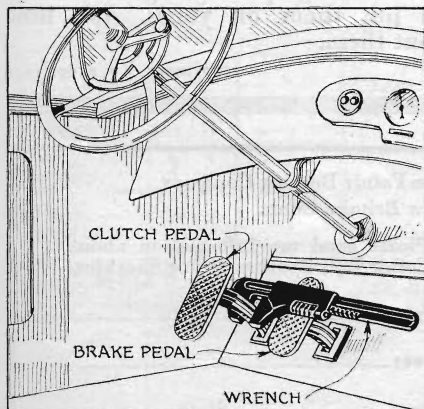


Fig. 3. The wrench, clamped to the clutch, holds brake pedal while adjustment is made.

Fig. 1. Guide rails fitted in garage will keep car from the side walls.

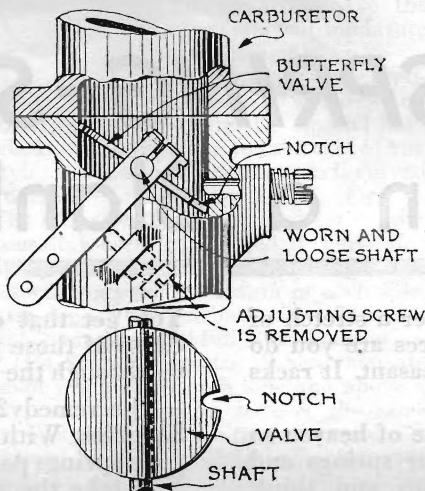


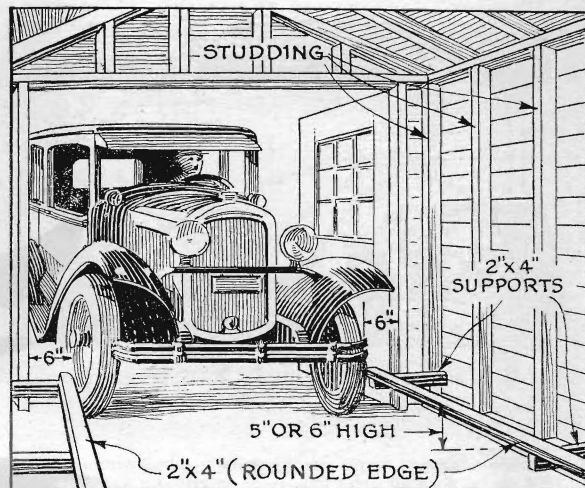
Fig. 2. With adjusting screw removed, file a notch in the butterfly valve to govern the idling speed of the motor, when the bearings admit air.

around the shaft bearings. A simple way to cure this trouble is to remove the adjusting screw entirely so that the butterfly closes tight. File a small notch in the edge of the butterfly valve as shown in Figure 2. This notch should be filed in the side of the butterfly valve on which the low speed nozzle is located and the size of the notch will govern the idling speed.

## Wrench Holds Brake Pedal

A NOVEL and ingenious method of holding the brake pedal while adjustments are being made on the brakes is shown in Figure 3. By setting the wrench so that it is fairly tight on the clutch pedal shaft, it will hold the brake pedal at any desired position so that the

POPULAR SCIENCE MONTHLY awards each month a prize of \$10, in addition to regular space rates, for the best idea sent in for motorists. This month's prize goes to H. C. McAninch, Durant, Okla., for his suggestion for method of holding brake pedal depressed (shown in Figure 3, at the left).



point is easily found where the brakes first begin to take hold.

## Curing Leaky Valve Guides

THE operation of a gasoline motor is not affected by leaky exhaust valve guides unless the wear is so bad that the valves do not properly seat, but leaky inlet guides cause irregular running at slow speeds and make it impossible to get the motor to idle smoothly. Figure 4 shows a way to eliminate this trouble. A light spring is fitted over the valve stem and a felt or leather washer is fitted on the stem with a hole that will just allow the valve stem to slide. It is a good idea to place a thin metal washer between the spring and the felt, although this washer is not shown in the illustration. The light spring will keep the washer pressing against the top of the guide and prevents air leakage and the consequent spoiling of the mixture.

This suggestion should prove useful on old cars where the expense of new valve guides is not justified.

## Wire Removes Broken Axle

WITH some types of rear axles it is difficult to remove the broken end without taking off the differential housing cover. Figure 5 shows how to accomplish this job without disturbing the cover. A loop is formed on the end of the wire as shown. The wire, of course, should be so stiff that the loop can be slipped down over the end of the axle. The slip noose arrangement will afford a sufficiently good purchase on the end of the axle to pull it out.

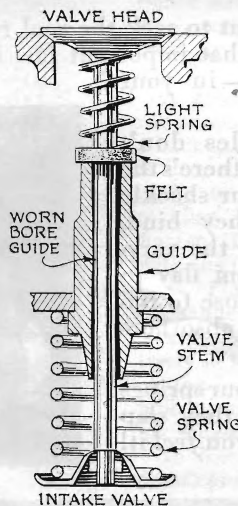


Fig. 4. Spring and washer on inlet guides stop leaks.

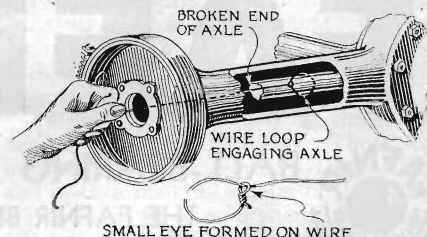


Fig. 5. A loop in a piece of stiff wire used to remove broken axle without disturbing cover.